

CLAIMS

1. Method for producing a multi-ply web having at least three plies of flexible material, which comprises:

- 5 bringing a first patterned glue transfer roll, having a three dimensional pattern of protuberances, in contact with a first glue application device;
- transferring glue to a first web shaped flexible material in a glue pattern of discrete glue sites corresponding to the configuration
- 10 of the protuberances;
- bringing a second web shaped flexible material in contact with the glue applied side of said first web shaped flexible material;
- bringing a second patterned glue transfer roll having a three dimensional pattern of protuberances in contact with a second glue
- 15 application device
- transferring glue to one external side of the combined first and second web shaped flexible materials in a second glue pattern of discrete glue sites corresponding to the configuration of the
- protuberances of said second glue transfer roll;
- 20 bringing a third web shaped flexible material in contact with the glue applied side of said combined first and second web shaped flexible materials in a press nip between a patterned lamination roll and an impression roll, said lamination roll having a three dimensional pattern of protuberances corresponding to at least one
- 25 of the first and second glue patterns,
- wherein the glue pattern of said second glue transfer roll is applied, as seen in the thickness direction of the multi-ply web, substantially aligned with the glue pattern applied by the first glue transfer roll, and the lamination roll and the first and second glue

transfer rolls are driven in registry with each other, so that the at least three plies of web shaped flexible material are pressed and glued together in a pattern corresponding to the aligned glue patterns.

5

2. The method as claimed in claim 1, wherein only one lamination roll is provided which is arranged after the second glue transfer roll.

3. The method as claimed in claim 1, wherein a first lamination roll and a second lamination roll are provided, the first lamination roll being arranged after the first glue transfer roll having a three dimensional pattern of protuberances corresponding to the first glue pattern and being driven in registry with said first glue transfer roll to press and glue the second web shaped flexible material to the first web shaped flexible material in a pattern corresponding to the first glue pattern, and the second lamination roll being arranged after the second glue transfer roll to press and glue the third web shaped flexible material to the combined first and second web shaped flexible materials in a pattern corresponding to the aligned glue patterns.

15
20

4. The method as claimed in claim 1, wherein any of said web shaped flexible materials comprises one or more plies of flexible material.

5. The method as claimed in claim 1, wherein at least one of the web shaped flexible materials before lamination with the other web shaped materials is exerted to a three dimensional patterning provided on the material while wet, during drying of the wet material and/or in dry state.

25

6. The method as claimed in claim 1, wherein substantially all glue sites of the second glue pattern are applied aligned with the glue sites of the first glue pattern.
- 5 7. The method as claimed in claim 1, wherein the size of each glue site (22,23) amounts to between 0.15 and 150 mm².
8. The method as claimed in claim 1, wherein the number of glue sites (22,23) per unit area amounts to between 25 per m² to 150 per
10 cm².
9. The method as claimed in claim 1, wherein the glue sites of the first and second glue patterns (22 and 23) are different as to shape, size and/or colour.
- 15 10. The method as claimed in claim 9, wherein the glue sites of the first and second glue patterns (22 and 23) when aligned in the thickness direction of the multi-ply web form a pattern, symbol, or figure.
- 20 11. The method as claimed in claim 1, wherein the glues used in the first and second glue application devices are different as to at least one of chemical composition and physical properties.
- 25 12. The method as claimed in claim 1, further comprising embossing the multi-ply web after lamination.
13. Multi-ply web of flexible material, comprising at least web three shaped flexible materials which are interconnected by gluing at a

- plurality of discrete glue sites, wherein a first and second web shaped flexible material of said multi-ply web are glued together in a first glue pattern comprising a plurality of spaced discrete glue sites and that a third web shaped flexible material is glued to the combined
- 5 first and second web shaped flexible materials in a second glue pattern comprising a plurality of spaced discrete glue sites which, as seen in the thickness direction of the multi-ply web, are substantially aligned with the glue sites of said first glue pattern.
- 10 14. The multi-ply web as claimed in claim 13, wherein any of said web shaped flexible materials comprises one or more plies of flexible material.
- 15 15. The multi-ply web as claimed in claim 13, wherein substantially all glue sites of the second glue pattern are applied aligned with the glue sites of the first glue pattern.
- 20 16. The multi-ply web as claimed in claim 13, wherein the size of each glue site amounts to between 0.15 and 150 mm².
17. The multi-ply web as claimed in claim 13, wherein the number of glue sites per unit area amounts to between 25 per m² to 150 per cm².
- 25 18. The multi-ply web as claimed in claim 13, wherein the at least one glue pattern is provided by a coloured glue.

19. The multi-ply web as claimed in claim 13, wherein the glue sites of the first and second glue patterns are different as to shape, size and/or colour.
- 5 20. The multi-ply web as claimed in claim 19, wherein the glue sites of the first and second glue patterns when aligned in the thickness direction of the multi-ply web form a pattern, symbol, or figure.
21. The multi-ply web as claimed in claim 13, wherein at least one of
10 the plies has a three-dimensional pattern provided before joining with another ply.
22. The multi-ply web as claimed in claim 13, wherein at least one of the plies has holes made deliberately therein.
- 15 23. The multi-ply web as claimed in claim 13, wherein the multi-ply web has been embossed after lamination.
24. The multi-ply web as claimed in claim 13, wherein the multi-ply
20 web comprises at least four plies glued together with at least a first and a second glue pattern aligned in the thickness direction of the web and that any edge embossing or other lamination than provided by said glue patterns are absent.
- 25 25. The multi-ply web as claimed in claim 24, wherein at least three glue patterns each comprising a plurality of spaced discrete glue sites are provided, said glue patterns being aligned in the thickness direction of said web.